

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number  
**WO 2005/062941 A2**

(51) International Patent Classification: **Not classified**

(21) International Application Number:  
PCT/US2004/043378

(22) International Filing Date:  
22 December 2004 (22.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/531,147 22 December 2003 (22.12.2003) US

(71) Applicant (for all designated States except US): **BOSSA NOVA TECHNOLOGIES, LLC** [US/US]; 606 Venice Boulevard, Suite B, Venice, CA 90291 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **POUET, Bruno** [FR/US]; 12048 Culver Blvd, #208, Los Angeles, CA 90066 (US).

(74) Agent: **OSHA, Jonathan**; Osha & May L.L.P., 1221 McKinney St., Suite 2800, Houston, TX 77010 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

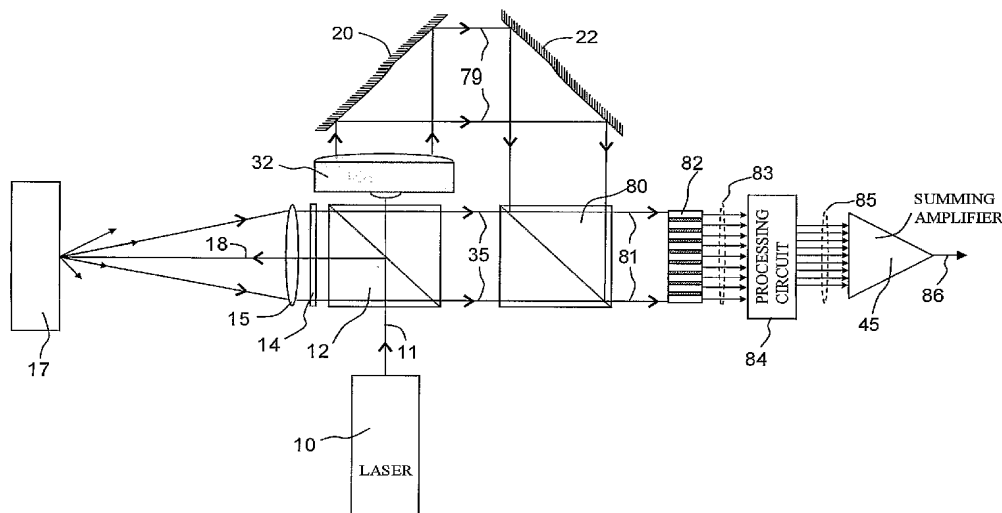
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: MULTI-CHANNEL LASER INTERFEROMETRIC METHOD AND APPARATUS FOR DETECTION OF ULTRA-SONIC MOTION FROM A SURFACE



(57) Abstract: A multi-channel laser interferometric method and apparatus are provided for optically measuring transient motion from a surface. A laser beam is generated and then divided into first and second beams having respective intensities representing minor and major fraction of the predetermined laser intensity. The reference beam illuminates the surface at which deformation is expected. The light back-scattered by the surface is collected by a single aperture lens and then made to interfere with the probe beam which has been expanded, onto a two-dimensional array of detectors. Each signal corresponding to each detector of the array is converted individually to an electrical signal, each electrical signal is amplified and processed, and the plurality of processed signals is then averaged in an electrical summing means.

WO 2005/062941 A2



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*